HOME CANNING *in* 12 Short Lessons

Modern HOMEMAKER

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by Millions of Homemakers
Everywhere
"The Sensible Seal"

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because it is Sanitary—Safe—Sure
Approved by leading Testing Kitchens
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Modern HOMEMAKER

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CANNING

FRUITS

IMPORTANT: SEE NOTE BELOW

	Hot Water Bath in Minutes	Pressure Cooker 5 lbs. In Minutes	Oven 250° Time In Minutes
Apples—Wash, pare, core, cut in pieces, drop in slightly salted water. Pack. Add syrup. Or boil 3 minutes in syrup. Pack. Add syrup.	25	10	75
Apricots—Wash, halve and pit. Pack. Add boiling syrup.	20	10	68
Berries (except strawberries), **Currants, Grapes**—Wash, stem, pack. Add syrup or water.	20	8	68
Cherries—Wash, stem, pit. Pack. Add syrup.	20	10	68
Figs—Wash, place in soda bath for 5 minutes, rinse, pack with syrup.	30	10	90
Fruit Juices—Crush fruit, heat slowly, strain. Pour into jars. Process in water bath.	30 (180°—simmering)		
Peaches—Peel, pack, add syrup, or precook 3 min. in syrup, pack, add syrup.	20	10	68
Pears—Select not overripe pears, pare, halve, precook 3 to 5 minutes in syrup. Pack. Add syrup.	25	10	75
Pineapple—Peel, remove eyes, cut or slice. Precook in No. 2 syrup 5 to 10 minutes. Pack with syrup.	30	15	90
Plums—Wash, prick skins. Pack. Add syrup.	20	10	68
Quinces—Wash, pare, cut in pieces. Precook 3 min. in syrup. Pack. Add syrup.	35	15	75
Rhubarb—Wash, cut into pieces. Pack. Add syrup.	10	5	68
Strawberries—Wash, stem, precook gently for 3 minutes in syrup. Remove from syrup and cool. Boil syrup 3 minutes. Add berries and let stand several hours. Re-heat. Pack.	20	8	68
Tomatoes—Scald 1 minute, cold dip 1 minute, peel, core, quarter. Pack.	35	10	75
Tomatoes for Salad—Scald 1 minute, cold dip 1 minute, peel, core. Pack. Cover with tomato juice.	35	10	75
Tomato Pulp or Puree—Irregular or undersized tomatoes may be used. Cook until soft. Press thru sieve. Pack.	35	10	75

MEATS

Meats packed raw do not require the addition of liquid.	Hot Water Bath	Pressure Cooker 15 lbs.
Lamb, Veal, Beef—Bleed well and cool thoroughly. Precook, pack, add salt 1 teaspoon to qt., add 3 to 4 tablespoons liquid. Or pack raw. Then process.	180	60
Pork—Bleed well and cool thoroughly. Precook, pack. add salt 1 teaspoon to qt., add 3 to 4 tablespoons liquid. Or pack raw. Then process.	180	60
Tenderloin, Ham, Pork Chops—Fry until brown. Pack, add salt 1 teaspoon to qt. Add 3 to 4 tablespoons water or broth. Or pack raw. Then process.	180	60
Sausage—Shape into cakes. Fry or bake until brown. Pack. Add 3 to 4 tablespoons liquid, then process.	180	60
Chicken, Rabbit, Duck, Turkey—Bleed well, cool thoroughly. Precook, pack, add salt 1 teaspoon to qt., add 3 to 4 tablespoons liquid. Or pack raw. Then process.	180	60 min. at 15 lbs. or 90 min. at 10 lbs.
Deer, Wild Birds, Geese—Bleed well. Thoroughly cool, soak in brine 30 minutes or parboil. Precook, pack, add salt 1 teaspoon to qt., add 3 to 4 tablespoons liquid. Or pack raw. Then process.	180	60
Fish, all kinds—Use only firm fresh fish. Bleed well. Wash. Precook. Pack, add salt 1 teaspoon to quart. Or pack raw. Then process	240	90

TIME TABLES

VEGETABLES

	Hot Water Bath In Minutes	Pressure Cooker Min.	Pressure Cooker Lbs.
IMPORTANT: SEE NOTE BELOW			
Artichokes, Asparagus—Wash, precook 3 minutes. Pack.			
Beans, String or Wax—Wash, string, cut or leave whole, precook 3 min. Pack.	180	40	10
Beans, Lima—Shell, grade, precook 3 minutes. Pack.	180	55	10
Beets—Wash, leave roots and stems long, precook 15 minutes, slip skins, pack.	120	40	10
Brussels Sprouts and Cabbage—Remove outer leaves, wash, precook 5 minutes. Pack.	120	35	10
Carrots, Kohlrabi—Wash, peel, precook 5 minutes. Pack.	120	35	10
Cauliflower or Broccoli—Remove outside leaves, wash, precook 4 min. Pack.	150	35	10
Corn on Cob—Remove husks, precook 3 to 5 minutes. Pack.	210	80	10
Corn—Remove husks. Cut from cob. Precook 3 to 5 minutes. Pack loosely.	210	80	10
Eggplant—Peel, cut in slices or strips, precook 5 minutes. Pack.	120	40	10
Greens, all kinds—Wash thoroughly, steam or precook to wilt, pack loosely.	180	60	10
Hominy—Precook 3 minutes, pack loosely.	120	40	10
Mushrooms—Clean, wash, cut large ones, precook 3 minutes. Pack loosely.	180	60	10
Okra—Wash, precook 3 min., pack.	180	40	10
Onions—Peel, wash, precook 5 min. Pack.	180	40	10
Parsnips, Turnips or Rutabagas—Wash, pare, precook 5 minutes. Pack.	90	35	10
Peas—Shell, grade, using only young fresh peas, precook 3 to 7 min. Pack loosely.	180	60	10
Peppers, Green, Sweet—Wash, remove seed pod, precook 3 minutes. Pack.	120	35	5
Peppers, Pimiento—Place in moderate oven 6-8 minutes. Peel, stem, cut out seeds, flatten. Pack.	120	35	5
Pumpkin, Squash—Cut in pieces, steam or bake tender, or precook 3 to 5 min. Pack.	180	60	10
Salad Mixtures—Prepare vegetables, precook separately, combine, process length of time necessary for vegetable requiring longest processing.	.....	....	....
Sauerkraut—Pack, add kraut juice or weak brine.	15	....	....
Sweet Potatoes—Wash, boil or steam 20 minutes, remove skins. Pack.	180	60	10
Tomatoes—(See under Fruits.)			
Tomato Juice—Wash, peel, cut in sections. Simmer until soft, press thru fine sieve. Bring to boiling. Pour at once into sterilized KERR Jars.	5	....	....

SOUPS *(see page 22)*

NOTE—If canning fruit in water bath with half-gallon jars add ten minutes to time given. If canning fruit in oven, for pints reduce time one-third. Half gallons increase time one-third. When canning vegetables and meats for half gallons in pressure cooker or water bath, increase time 20 per cent.

LIQUIDS—Where recipes call for filling jar with water or syrup, fill only to within one-half inch of top of jar when using water, or one and one-half inches of top of jar when using syrup on fruits packed cold. Or syrup to within one-half inch of top when fruits are packed hot.

TIME FOR DIFFERENT ALTITUDES—The time given in the time tables in this book is based on the one-quart pack (except as per note above) and on fresh products at altitudes up to 1,000 feet. For higher altitudes increase the time 10 per cent for each additional 500 feet, except for pressure cooker canning. For elevation up to 2,000 feet use pressure given in time table. After the first 2,000 feet one pound of pressure should be added for each additional 2,000 feet of elevation.

NOTE: All vegetables and meats canned at home should be boiled in an open vessel 10 to 15 minutes before tasting or using.

FREE HELP *with your* CANNING Problems

Any question about recipes, methods of canning, is answered

FREE

Write your problem clearly and briefly. Enclose a self-addressed and stamped envelope for your reply.

Address: Mrs. Ruth Kerr
(Desk "K")
906 Title Insurance Bldg.
Los Angeles, Calif.

COMPLETE CANNING BOOK
Recipes, Instructions, Time Charts, etc., etc.

Pictured Progress of Fruit Jars

"Ox cart Crocks"

Crocks were first used for home canning. Frequently they were made and burned by the users themselves. Wax and paper sealed them.

"Horse and Buggy Jars"

Then the "Mason patented glass jar in 1858," with the zinc top and porcelain liner. It sealed with rubbers on the shoulder.

"Early type of Auto Jars"

After this came the glass top with a spring clamp, but still sealed by a rubber ring.

"Modern Airplane Jars"

Then Kerr patented the modern and sanitary "self-sealing" cap which sealed on the top—no rubbers needed for the natural gray vegetable composition "flowed-in" makes a perfect quick and easy seal to make and to open.

And Kerr improved the mason jars by using clear crystal flint glass tempered for heat and for all methods of canning.

Questions on Lesson 1

1. *What were the customary methods of preserving food until the beginning of the XIXth Century?*
2. *What wars were directly responsible for the discovery of hermetically sealing foods in order to keep them?*
3. *To what one individual belongs the credit for discovering the most practical method of preserving foods?*
4. *What method of preserving did Appert employ?*
5. *Who introduced canning in England?*
6. *Where and by whom was the first patent obtained for preserving meat, fruit and vegetables in tin cans?*
7. *Who determined the real cause of putrefaction (spoilage)?*
8. *What are the organisms that cause spoilage and where are they found?*
9. *At the time of the Civil War, during the early days of the canning industry, what method of canning was employed?*
10. *What was the next step in home canning?*

Lesson 1—The Origin and History of Home Canning

MANKIND has long been interested in the preservation of food and several methods had been used before the beginning of the nineteenth century. These were drying, pickling, smoking and preserving in sugar.

The Napoleonic Wars were directly responsible for the discovery of hermetically sealed foods. Near the end of the Eighteenth Century the French government offered a prize of 12,000 francs to the person discovering how to preserve foods for sea service and military stores. M. Nicholas Appert (pronounced Appear) of Paris began experimenting and was awarded the prize for his discovery.

His method was to heat fruit and pack it at once in a glass bottle which was corked and then processed in a water bath, by gradually heating for varying lengths of time, depending upon the kind of fruit being canned. Appert did not know why the food would keep, if treated in this manner. He knew nothing of bacteriology and wrote in his report, "Absolute privation of the contact of external air is necessary after the internal air is rendered of no effect by proper application of heat, by means of a water bath."

IN England, Thomas Sodding submitted a paper in 1807 entitled, "A Method of Preserving Fruits Without Sugar for House and Sea Stores."

Peter Durrand, also of England, was the first to obtain a patent for preserving meat, fruit and vegetables in tin cans. He is sometimes called "the father of the tin can."

LOUIS PASTEUR

IT remained for Louis Pasteur, the pioneer in the development of modern bacteriology, to determine that the real cause of spoilage was living micro-organisms which come in contact with the material, causing spoilage.

He showed that these organisms are molds, yeasts and bacteria and belong to the lowest order of plant life. They are in the water we drink, in the ground, floating in the air we breathe, and on all objects.

During the early days of the canning industry, at the time of the Civil War, only the open kettle method of canning was used for acid fruits and tomatoes. The highest possible temperature in this method was 212 degrees Fahrenheit.

It was soon discovered that a temperature higher than 212 degrees Fahrenheit would kill more bacteria and insure more successful results by a shorter processing.

Who said Canning was hard to learn?

Questions on Lesson 2

11. Describe difference between "Methods of Canning" and "Methods of Processing."
12. What "METHODS OF CANNING" are used universally today? Describe each.
13. How do you sterilize jars to be used in open kettle method of canning?
14. How are caps and lids sterilized?
15. Name 10 steps of procedure for open kettle canning in their proper order.
16. May the open kettle method be used for canning all foods, or is it limited to certain foods?
17. Indicate height at which jars are to be filled with product and liquid if canned by open kettle method. (Overflowing) or (½ inch from top).
18. How many jars may be filled at one time in open kettle canning?
19. In open kettle canning should products be (fairly hot) (boiling) or (cold)? Cross out wrong answers.

There are THREE principal METHODS of HOME CANNING:

(1) The Open Kettle
(2) Hot Pack
(3) Cold Pack

These are "Methods of CANNING" and are not to be confused with "Methods of PROCESSING."

"Methods of CANNING" deal with the various ways of preparing food prior to the actual processing. "Processing" is the term used for cooking or heating material which has been packed in various types of containers, to kill bacteria and sterilize contents of jars.

OPEN KETTLE

THE "Open Kettle Method of Canning," used by our great, great grandmothers, means the cooking of fruits or tomatoes in an open kettle. Vegetables or meats cannot be canned successfully by the open kettle method, as they contain no

Lesson 2— Methods of Canning

natural acid. The acid of fruits and tomatoes combined with the heat of cooking sterilizes the food, and if product is placed WHILE STILL BOILING HOT into freshly sterilized jars, the same acid is usually sufficient to inhibit the growth of organisms which survive the cooking.

The SECRET OF SUCCESS in "Open Kettle" canning lies in the fact that you must have sterilization by sufficient cooking, and you must fill only ONE jar at a time WITH THE BOILING HOT PRODUCT to within one-half inch from top of jar with fruit and syrup—quickly wipe sealing surface free of seeds, pulp, etc., and place sterilized lid in place at once, screwing the band down firmly tight. Then proceed to fill and seal the next jar. DO NOT REMOVE VESSEL CONTAINING BOILING PRODUCT from stove, but keep products boiling until last jar is filled and sealed.

Home canners sometimes wonder why they are not successful with their open kettle canning or why some of their jars seal and others do not. Nine times out of ten their trouble can be traced to filling three or four jars at a time, then proceeding to cap them, with the result contents of the last jars will be partially cold before capped and therefore will not keep.

WITH a view to simplifying canning and to remove any possible doubt as to proper procedure in Open Kettle Canning, the Kerr Mason Jar Company outlines the following ten steps of procedure:

No. 1. Examine top of jars to see that there are no nicks, cracks, sharp edges, etc.

No. 2. Wash jars well in hot, soapy water, then boil in clear water for at least 15 minutes.

No. 3. Select fresh, firm (not over-ripe) products. Grade according to size and ripeness.

No. 4. Prepare according to recipe.

No. 5. Boil for required length of time.

No. 6. Fill only ONE sterilized KERR jar at a time to within ½ inch of top with the boiling hot product and liquid.

No. 7. Wipe top lip or rim of jar free of all seeds, pulp, etc.

No. 8. Seal each jar immediately as filled by placing sterilized KERR lid on jar with sealing composition next to glass, and screwing band firmly tight. When using Economy Jar, place sterilized Economy Cap on jar and put on clamp. If clamp is too loose, bend sufficiently to hold cap firmly on jar.

No. 9. Set aside to cool on surface on which several thicknesses of cloth have been laid. Do not turn KERR Jars upside down while cooling and sealing and do not screw bands down after jars are cold and sealed.

No. 10. Test for seal as follows: When jars are cold, take a spoon and gently tap the *"Self-Sealing"* lids. If properly sealed they will give a clear ringing note, and be slightly concave (curved inwardly) caused by the vacuum inside. If not properly sealed, the sound will be dull and low in key, in which case you have an opportunity to re-can contents and thus save your food. Remove screw bands after 24 hours as bands are unnecessary once jars are sealed. Use screw bands over and over again.

STERILIZATION of jars and caps for the Open Kettle method of canning is an important factor. To do this wash jars thoroughly with soap and warm water, rinse well, place in a pan having a folded cloth or rack in the bottom. Cover jars with warm water. Boil for 15 minutes. The jars should remain in this hot water until ready for use.

To sterilize caps and lids, if the *"Self-Sealing"* type of lid is used, place the lids in a shallow pan or bowl and pour boiling water over them. They may remain in the pan of water until ready to be placed on the jars. Screwbands need not be sterilized but only the lids (flat disc with sealing composition flowed in). Other types of caps (zinc and glass) should be boiled. Rubber rings are scalded in hot water before placing on jars.

TWIN SAVINGS

Enjoy this DOUBLE SAVING

USE Kerr "self-sealing" MASON JARS, CAPS and LIDS

You, too, can save time and save money by using KERR MASON JARS and KERR "Self-Sealing" Caps and Lids for all your home canning.

Learn to can the easy, economical, safe way.

"We have done practically all the home canning for the past two years. Together we canned over three hundred quarts last summer. We always use the Kerr lid as we find it very practical and economical. Our mother has always enjoyed the Kerr also, because of its labor saving devices."

TRY THIS Tasty RECIPE!

Orange-Peach Marmalade

12 medium cling peaches — 3 medium oranges
Rind of 1½ oranges — Sugar (see below)

Wash and peel peaches, wash oranges, remove peel from 1½ of the oranges, grind fruit, combine and measure into large preserving kettle; add equal amount of sugar. Bring to boil. Boil rapidly 25 to 30 minutes, stirring occasionally to prevent burning. Pour into sterilized KERR Jars and seal.

MRS. RUTH KERR
Recognized Authority on Home Canning

Methods of Canning—Hot and Cold

Lesson 3

Questions

20. *When using the "Hot Pack" method, what four products should be packed to within 1 inch from top of jar?*
21. *How high should all other products be packed?*
22. *When using the "Hot Pack" method, at what height should liquid be filled when canning fruits? Vegetables? Meats?*
23. *Is there more loss of flavor and food values in open kettle or cold or hot pack method of canning?*
24. *What is meant by screwing bands down "firmly tight"?*
25. *(a) What fruit jar caps are screwed down BEFORE processing and then not screwed down again after processing or when jars are cold? (b) What kinds are only partly screwed down before processing and screwed down again after processing.*
26. *Should processed jars ever be turned up side down or screw bands screwed down after jars are cold?*

Cold Pack Method

THE "Cold Pack Method" of canning consists of packing the cold product into the jar, then processing (cooking). Most products are packed raw; others, in order to remove the skin, are blanched (scalded) in hot water or steam and then dipped into cold water, peeled and packed into jars.

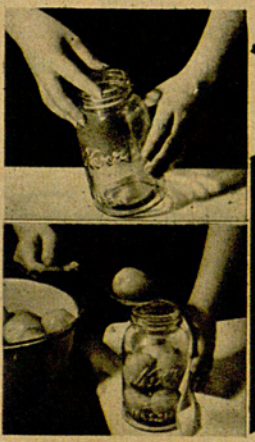
Hot Pack Method

THE "Hot Pack Method" consists of a short, pre-cooking (boiling), after which the boiling hot product is packed into clean jars and processed (cooked) immediately. The "Hot Pack Method" has been found more satisfactory for vegetables and meats.

In using the Hot or Cold Pack Method of canning, the following steps should be observed:

1. Examine top of jars to see that there are no nicks, cracks, sharp edges, etc.
2. Thoroughly cleanse the jars with hot water.
3. Select product—fresh, firm (not over-ripe) and grade according to size and ripeness. (Before proceeding with the next step, the home canner must decide whether she wants to can the particular product by the hot or cold pack method.)
4. Prepare product according to recipe.
5. Pack product into clean jars to not more than ½ inch of the top, (except corn, lima beans, peas and meats. For these products fill jars to within 1 inch from top with product).
6. Add liquid.
   a. Fruits: Syrup to within 1½ inches of top of jar when fruit is packed cold or ½ inch of top when fruit is packed hot.
   b. Vegetables: Liquid to within ½ inch of top of jar. (Salt or other seasoning may be added.)
   c. Meats: For pre-cooked meats, add 3 or 4 tablespoons of liquid. Meats packed raw do not require the addition of liquid.
7. Wipe top of jar free of all seeds, pulp, grease, etc.
8. Place sterilized *"Self-Sealing"* lid on the jar with sealing composition next to glass, and screw the band firmly tight before processing. By "firmly tight" we mean as tight as the hand can conveniently screw the band without using undue exertion such as wrenches, etc. When using the Economy Cap, place sterilized cap on jar and put on clamp. If clamp is too loose, bend sufficiently to hold cap firmly on jar. If using screw top jar caps which

STEPS IN CANNING *(Open Kettle)*



1. Examine top of jar to see that there are no nicks, cracks, sharp edges, etc.

2. Open kettle method. Fill only one sterilized Kerr Jar at a time.

3. Wipe top of jar free from all seeds, pulp, grease, etc.

4. Place "self-sealing" lid on and screw firmly tight.

5. When cold test for seal.

How to Know Positively Your Jars are Sealed (Test for Seal)

To test for a perfect seal: When jars are cold, take a spoon and gently tap the lids. If there is no food touching the lid, they will give a clear ringing note and be slightly concave (curved inwardly) caused by the vacuum inside.

If not properly sealed the sound will be dull and low in key, in which case you have an opportunity to recan contents and thus save your food.

seal with rubber rings, screw cap on tight, then turn back one-fourth inch. On these types of jars, caps are screwed down again after processing is completed. With the *"Self-Sealing"* type this is unnecessary.

9. Process required length of time according to time table, whether for pressure cooker, hot water bath, oven or steam cooker.

10. Remove jars from cooker or oven. Do not tighten screw bands on *"Self-Sealing"* jars nor attempt to adjust Economy clamps. Set jars on surface on which several thicknesses of cloth have been laid. Do not turn *"Self-Sealing"* jars upside down while cooling and sealing, and do not screw bands down after jars are cold and sealed. Do not set hot jars in a draft. On makes of caps other than the *"Self-Sealing"* type, caps must be screwed down after processing. *"Self-Sealing"* caps are always screwed down firmly tight BEFORE processing and then not screwed down after processing or when cold. *"Self-Sealing"* jars SEAL AS THEY COOL.

11. Test for seal (same as in Step 10 of Open Kettle Method). Remove screw bands after 24 hours as bands are unnecessary once jars have been tested and are sealed. Use screw bands over and over again.

HOME canners often ask the question, "Is there a difference in the flavor of canned fruit when canned open kettle method or hot or cold pack method?" In open kettle canning there is a loss of flavor and a boiling away of some of the food values which is not the case when the hot or cold pack method (cooked in the jar) is employed.

Kerr
WIDE MOUTH MASON CAPS
WIDE MOUTH MASON LIDS
WIDE MOUTH MASON
MASON CAPS
MASON LIDS
MASON
FIRST AWARDS
● Year after year, in County and State Fairs, the women who exhibit their home canning, find that the clear flint KERR Mason Jars take the prizes.
Especially, KERR Wide-Mouth in both Round and Square models are the favorites. Large enough for your hand to go in and arrange with precision the fruits, vegetables or meats.
the KERR WAY is the SAFE WAY
Ten Reasons Why
(1) No rubber rings required.
(2) No wrenches needed.
(3) No adjusting of rubbers on hot filled jars.
(4) No tightening of Caps after processing.
(5) No turning jars upside down to test for seal.
(6) No crevices for germs to lurk.
(7) No mold.
(8) No spoilage.
(9) Only inexpensive Kerr Lids required after the first year. Save your screw bands and use them over and over.
(10) For all methods of canning —Pressure Cooker, Hot Water Bath, Open Kettle and Oven.

Questions on Lesson 4

27. How many METHODS OF PROCESSING are there? Name them.
28. In hot water bath processing, how high should the water be in the boiler or canner?
29. If water surrounding the jars boils down should cold, hot or boiling water be added?
30. When should you start counting processing time when canning by pressure cooker?
31. Should pressure cooker be opened as soon as processing period is completed?
32. What method of processing does the U. S. government recommend for canning non-acid vegetables and meats?
33. What foods may be canned by the oven method of processing?
34. In oven canning at what temperature should oven regulator be set?
35. Should jars be placed together as closely as possible on oven rack for oven method of processing?

Lesson 4— Methods of Processing

THE application of heat to products in the jar is called "processing."

There are four **"Methods of Processing"** in use today. The oldest and most universally used is the Hot Water Bath. Pressure Cooker, Steam Cooker and Oven are the other three.

Hot Water Bath

FOR the hot water bath a wash boiler or large deep vessel that has a close fitting cover may be used as a canner. A "canner" must be fitted with a rack made of laths, galvanized wire or other perforated material. This rack must hold the jars at least ½ inch above the bottom of the canner. Have the water in the canner near the boiling point when jars of food are placed into it.

Place filled jars on the rack in the canner, far enough apart to allow free circulation of water around them. The water should cover the jars at least one inch over the top. Start counting processing time as soon as water surrounding the jars begins to boil. Keep water boiling for entire processing period. If water boils down, sufficient boiling water should be added to keep it at required height.

Pressure Cooker

A PRESSURE COOKER is recommended for the processing of vegetables, meats and non-acid foods. It shortens processing time because of the greater degree of heat obtainable, and is safer, but if one does not have a pressure cooker, canning may be done successfully by other methods. Home canners should always be careful to observe this simple rule: "All vegetables and meats canned at home should be boiled in an open vessel 10 to 15 minutes before tasting or using." (In the case of meats, they should be fried or baked.)

To simplify pressure cooker canning, if one will carefully observe the various steps in proper sequence, the results will be most gratifying and successful. These steps are enumerated as follows:

1. Prepare product and proceed according to directions for Hot and Cold Pack canning.
2. Place rack in bottom of cooker and add enough hot water to bring up to level of rack.
3. Place the filled jars on the rack in the cooker. Prepare only enough jars at one time to fill the cooker. Do not allow jars to touch.
4. Adjust the cover of cooker and fasten securely by tightening opposite clamps or adjusting band.
5. Leave the petcock open until a jet of steam has been spurting from the petcock for 7 to 10 minutes. Then close petcock and start counting processing time from the minute the required amount of pressure is indicated on the pressure gauge. Keep pressure uniform throughout the processing period.
6. Process for required length of time according to time table.

7. Remove cooker from the fire as soon as the processing time is up and allow the indicator on the pressuer gauge to return to zero. Then open petcock gradually.

8. Remove jars from cooker. Do not tighten screw bands. Set on surface on which several thicknesses of cloth have been laid. Do not turn KERR Jars up side down while cooling and sealing, and do not screw bands down after jars are cold and sealed.

9. Test for seal (Lesson No. 2).

The U.S. Department of Agriculture recommends the use of a pressure cooker for canning non-acid vegetables and meats.

Oven Processing

OVEN canning is preferable for processing fruits and tomatoes. The finished product is beautiful in appearance, texture, color and flavor. This method does away with the fuss and muss of some other methods of canning.

This method should only be used if you have a gas or electric range having an automatic heat control (oven regulator) which must be kept at 250 degrees throughout the processing period. Small oven thermometers may be purchased at your hardware or department store. These will register the oven temperature but will not regulate it. Coal, wood and oil stoves cannot be used successfully for this method, as the heat fluctuation is too great.

1. Prepare product and proceed according to directions for Hot and Cold Pack canning.

2. Set jars on rack in cold oven. Jars should not touch each other or sides of oven.

3. Light oven (or if using an electric oven, turn on switch, using lower unit only); set regulator at 250°. Start counting time when oven is lighted or switch turned on.

4. Temperature should not exceed 250°. Higher temperature will cause the liquid to boil too hard and evaporate.

5. Process the required length of time according to time table.

6. Remove jars from oven. Do not tighten screw bands. Set on surface on which several thicknesses of cloth have been laid. Do not turn KERR Jars up side down while cooling and sealing, and do not screw bands down after jars are cold and sealed.

7. Test for seal (Lesson No. 2).

To sum it all up, there are three methods of canning, and four methods of processing.

Steam Cooker

ANOTHER method of processing is the steam cooker. This must not be confused with a pressure cooker. Start counting processing time when the cooker is well filled with steam. Follow water bath time table.

NEXT TIME . . . TRY THESE

Standard
Kerr Mason SQUARE Jar

It's called "square"—the corners are rounded. . . Women like them because they pack nicely and are less liable to slip.

New Square
Wide-Mouth Kerr Mason

No jar equals the famous Kerr Wide-Mouth—now made in the "square" model . . . as well as the round.

Additional Facts Regarding Pressure Cooker Canning

36. *At what temperature can all known bacteria be destroyed?*
37. *What method of processing is highly recommended by the U. S. Department of Agriculture, Home Economics leaders, etc., as being the quickest, safest and least expensive method of processing meats, vegetables and non-acid foods?*
38. *Is a pressure cooker affected by altitude?*
39. *Commencing with what altitude must pressure be increased, and how much?*
40. *If you are living at an altitude of 6000 feet and want to can string beans (which in altitudes up to 2000 feet are processed at 10 pounds pressure for 40 minutes) what pressure would you use?*
41. *Explain the relation between pounds of pressure and degrees of temperature. Five pounds pressure is equal to what degree of temperature? Ten pounds? Fifteen pounds?*
42. *Give four reasons why loss of liquid sometimes occurs during pressure cooker processing.*
43. *If you are using a pressure cooker for processing, and the "Self-Sealing" type of caps, what time tables and directions would you follow?*

Lesson 5—

THERE are no known bacteria that can endure a temperature of 240° to 250° F. for any length of time, consequently, the PRESSURE COOKER METHOD of processing (which is the only one in which the food reaches these high temperatures) has become quite a favorite and is recommended for processing vegetables, meats, and non-acid foods as a higher degree of temperature is obtainable, thus insuring easier destruction of harmful bacteria, and giving a greater degree of safety.

This method of processing has two strong arguments in its favor:

(a) Processing is less expensive in time, energy and fuel.

(b) Meats and vegetables processed in this way will show a minimum of spoilage.

The inside temperature of a pressure cooker is not affected by altitude, but the pressure gauge is slightly affected. For pressure up to 2,000 feet of altitude, use the pressure given in canning time tables. After the first 2,000 feet one pound of pressure should be added for each additional 2,000 feet of elevation.

A simple explanation of the relation between pounds of Steam Pressure and Degrees of Temperature (Fahrenheit) within the cooker, is given below:

5 lbs. pressure equals 228° Fahrenheit
10 lbs. pressure equals 240° Fahrenheit
15 lbs. pressure equals 250° Fahrenheit
20 lbs. pressure equals 259° Fahrenheit
25 lbs. pressure equals 267° Fahrenheit

In caring for a pressure cooker, follow the directions of the manufacturer. For correct handling of jars and caps preparatory to pressure cooker processing, follow the directions of the manufacturer of your jars and caps. Each firm has their own directions and it stands to reason they are more familiar with their jars and caps than anyone else. Sometimes homemakers make the mistake of using one type of cap, yet following the instructions of another manufacturer. The results are sometimes disastrous and the cap is blamed, when, as a matter of fact, it is the innocent victim.

Occasionally there is a loss of liquid in processing in glass jars by the pressure cooker method. United States Department of Agriculture Farmers Bulletin No. 1762 says of this, "While this may occur to some extent with all types of jars, it is generally less with those of the vacuum-sealing type."

Loss of liquid may be reduced materially by observing the following points:

1. **Do not pack jars too solidly with food.**
2. **Do not fill jars too full of liquid. If using water, fill jar to within ½ inch from top; if using syrup, fill to within 1½ inches of top of jar when fruit is packed cold or ½ inch from top when fruit is packed hot.**
3. **Do not use too high a pressure.**
4. **Fluctuation or sudden lowering of temperature will cause loss of liquid. Petcock should not be opened and pressure cooker cover removed until indicator or gauge goes back to zero.**

IN CONCLUSION, If you are using the "Self-Sealing" cap, follow instructions and time tables which accompany the caps. If using zinc or glass top caps, follow the instructions of the manufacturers of those types of caps.

"Is it safe to screw caps fully down on jars before processing by the pressure cooker method?" is a question often asked. That depends entirely upon the cap you are using. With the *"Self-Sealing"* type of cap you may screw the cap down firmly tight BEFORE processing, since *"Self-Sealing"* caps seal by the cooling of the contents of the jar and not through pressure of the screw band on the lid. Therefore, although the screw band is firmly tight, the jar is not sealed until it has cooled and during the processing the flexible lid permits the jar to exhaust. ECONOMY CAPS are held in place during processing and until cold by means of a clamp.

What is meant by screwing a *"Self-Sealing"* cap "firmly tight"? It means as tight as the hand can conveniently screw the band without using undue exertion or wrenches.

For zinc caps, the cap is screwed on until it is tight and then turned back one-fourth inch. After processing the cap is screwed down as tightly as possible on the jar.

On glass lid, wire-clamp jars, the top clamp is snapped into place and the side clamp is left up. After processing the side clamp is pushed down.

KERR LID

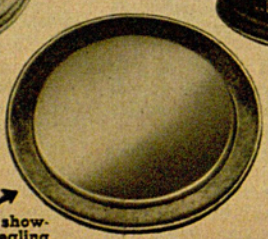
Inexpensive KERR Mason Lids are all that are required after the first year. Packed one dozen to carton.

The Most Important Lesson of All

Screw Band + Lid = Kerr Mason Cap

KERR SCREW BAND

KERR MASON CAP



Under side of Kerr lid, showing the natural gray sealing composition flowed in.

The gold lacquer used on both sides of KERR Caps and Lids is the finest, most sanitary coating that science has yet developed. Resistant to heat and not affected by fruit or vegetable acids. Gold lacquer is used by all commercial packers of food products.

Lesson 6— General Canning Instructions

"How high should jars be filled with product and liquid?" is a question often asked by home canners. We have long since discarded the mistaken idea that in order to expel air from jars they must be filled to overflowing. It has been proven conclusively that this procedure is unnecessary and likely to prevent a seal. Filling jars to the top or overflowing is the chief cause of loss of liquid during processing, and also causes particles of fruit, pulp, meat, seeds, and grease to lodge between the glass sealing surface of jars and the "flowed-in" composition in the lids.

Having learned that filling jars to overflowing is the wrong thing to do, what then is the right way and is there one universal procedure to follow regardless of what product is being canned? There is no common rule, for methods of processing, expansion of certain products and syrups must all be considered.

When canning by the open kettle method, fruit and syrup are filled in jar to within ½ inch from top. Since, in open kettle canning, the product and syrup are completely cooked before ever being filled in jars, there is no need to allow for expansion.

When processing fruits with water (not syrup) by pressure cooker, hot water bath or oven method, fruit and water may be filled to within ½ inch from the tops of jars. Some people prefer to can fruits without sugar (especially where diabetic conditions exist) others maintain the syrup brings out the delicate flavor of the fruit to better advantage.

It is common knowledge that during processing sugar and water (syrup) expand more than water, and extract more of the juice from the fruit, consequently due allowance must be made.

"How many kinds of syrup are there, and how will we know when to use thin syrup or thick syrup?" There are three kinds of syrup—thin, medium and heavy, and if you can remember the 1-2-3 rule you will have no difficulty in knowing how to make syrups.

Questions on Lesson 6

44. *Should jars ever be filled to overflowing?*
45. *How many grades of syrup are there? Name them.*
46. *Describe how to prepare thin, medium and heavy syrups.*
47. *For what fruits should a thin syrup be used? Medium syrup? Heavy syrup?*
48. *Are there any other syrup combinations that may be used?*
49. *What fruits should be dropped in salted water immediately after peeling and before packing in jars, so as to prevent discoloration before packing?*

"Young Mrs. Hubbard went to her cupboard..."

to get her own home-canned Vegetables Fruits Jams Preserves

●

All "put up" in KERR "self-sealing" jars...

Try this Recipe...

3-Fruit Preserves

2 pts. raspberries
2 pts. strawberries
1 or 1½ lbs. cherries

Equal amount of sugar by weight, of all fruits

Combine all ingredients and boil 25 minutes. Add ½ cup lemon juice and boil 2 minutes more. Remove and allow to cool. When cold pack into sterilized KERR jars and seal. When these preserves are finished, they may look as if they are too thin, but consistency thickens upon standing and after being packed into jars.

As a dealer, I know which products are good and which are only fair...and say very frankly "Kerr Jars and Caps ARE best"

- *The sanitary Kerr Cap requires no rubbers—it is "self-sealing."*
- *98 out of 100 women said they preferred Kerr because they were Safe—Sure—Sanitary.*

As a School Purchasing Manager, it's my job to find out which fruit jars and caps are best for the money...We find Kerr Mason Jars stand up better, and have fewer replacements. The Home Economics teachers all recommend Kerr...so that is why we buy ONLY KERR Jars, Caps & Lids

Twenty years of teaching girls to cook and do home canning has convinced me of two very important things. First, canning is comparatively simple if one follows the clear instructions of Mrs. Kerr's book. Second, girls who come back to school for visits always say, "Home canning, you urged us to learn has helped us more than any other one thing we learned in school."

Thin syrup consists of 3 parts water or fruit juice to 1 part sugar and brought to a boil. Medium syrup is 2 parts water or fruit juice and 1 part sugar brought to a boil, while thick syrup is made of 1 part water and 1 part sugar brought to a boil.

Soft fruits such as sweet cherries, berries, etc., are best canned with a thin syrup, while a medium syrup should be used for peaches, sour berries, acid fruits such as rhubarb, cherries and gooseberries. Heavy syrup is used for larger sour fruits that are to be extra sweet.

Other syrup combinations may be made by using white corn syrup or honey—either of which may be combined with sugar, or honey or white corn syrup may be substituted for sugar, according to the individual taste. One and one-half cups of corn syrup equal 1 cup sugar and 1 cup honey equals 1 cup sugar.

"What precaution should be taken when canning peaches, pears and apples, etc., to keep them from turning brown, after being canned?" is a question sometimes asked by canners. When working with these particular fruits it is well to have a pan filled with slightly salted water (2 teaspoons of salt to each quart of water). Drop the fruit in this salted water as soon as you peel each one and allow to remain until ready to pack your jars. Drain salt water from fruit just before packing, and proceed to fill your jars with fruit to required height. This will prevent discoloration BEFORE packing.

To prevent discoloration of fruit AFTER canning, it is necessary to process jars of fruit long enough (according to reliable time tables) to properly expel the air from the jar and render inactive enzymes (natural chemical substances) in the fruit.

HOME CANNING Saves the VITAMINS FOR HEALTH DEFENSE

GOOD HEALTH is built and the buoyancy of youth prolonged by a diet which provides the necessary proteins, vitamins and minerals. By Modern Canning Methods the Nutritive Values of Foods are retained—even more so than by certain home-cooking methods.

VITAMIN A—Builds resistance to disease; stimulates appetite and digestion; prevents night blindness.

VITAMIN B—Helps to overcome nervousness; improves assimilation of foods.

VITAMIN C—Builds teeth and bone; aids in healing of wounds; strengthens body tissues.

VITAMIN D—Increases absorption of calcium and phosphorus; improves teeth and bones; prevents rickets.

VITAMIN E—Necessary for normal reproduction; promotes proper functioning of the pituitary gland.

VITAMIN G—Necessary for growth; promotes physical well-being; increases and retains vigor; preserves youth.

VITAMINS FOUND IN FRUITS, VEGETABLES AND MEATS

Asparagus	A-B_1-C-G	Apples	C
Beans, String	A-B_1-C-G	Apricots	A-B_1-C
Beans, Lima	B_1-C	Cherries	A-B_1-C
Beets	A-B_1-C	Grapes	A-B_1-C
Cabbage	A-B_1-C	Peaches	C
Carrots	A-B_1-C-G	Pears	A-B_1-C
Cauliflower or Broccoli	A-B_1-C	Pineapple	A-B_1-C
Corn	A-B_1-C-G	Beef	A-B_1-C
Peas	A-B_1-C-G	Lamb	A-B_1-C
Spinach	A-B_1-C	Pork	B_1-C
Tomatoes	A-B_1-C	Veal	A-B_1-C
		Fish and Fowl	A-B_1-C

HOMEMAKERS, you have the welfare of your families at heart. Can fruits, vegetables and meats in KERR MASON JARS. Be sure of preserving ALL the VITAMINS for BETTER HEALTH.

Questions on Lesson 7

50. *What four products must not be packed too tightly in jars because of their texture and the manner in which they expand during processing, and also because heat cannot penetrate to center of jars if packed too tightly?*
51. *All other vegetables should be packed how high in a jar?*
52. *If meats are packed raw in jars, how much liquid should be added?*
53. *For processing pre-cooked meats in jars, how much liquid should be added?*

Lesson 7— Peas, Beans, Corn

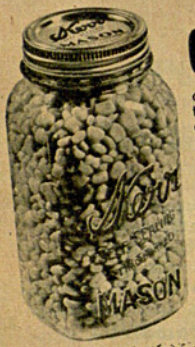
THERE ARE THREE VEGETABLES that are starchy in texture and expand (swell) more than other vegetables during processing, consequently they must never be packed tightly in jars and jars must not be filled too full. Heat cannot penetrate to the center of the jar during processing if these three products are packed too tightly, nor do we allow room for expansion if jars are packed too full.

THE THREE VEGETABLES IN QUESTION are peas, lima beans and corn. Someone has called them the "three demons" since many women experience difficulty in canning them or getting them to keep, but they are relatively simple to can and to keep if the rules as to filling and packing are scrupulously adhered to and care is taken not to use over-ripe products and to process the proper length of time. Never pack peas, lima beans and corn higher than one inch from top of jar, but liquid may be filled to within ½ inch from top. All other vegetables are packed ½ inch from top of jar with liquid ½ inch from top also.

MEATS COME UNDER THE SAME CATEGORY as peas, lima beans and corn, in that they must not be packed too tightly nor packed higher than one inch from top so as to allow for expansion. If meats have been pre-cooked (boiled, roasted, seared or fried) before being packed in jars, then add only three to four tablespoons of liquid to each jar. If meats are packed raw in jars then add no liquid whatsoever. To cover meats with liquid would mean that during the violent boiling to which the meat is subjected in processing, an excessive amount of grease from the meat would reach the sealing medium of the cap. It is a known fact that grease will soften or deteriorate any rubber or any sealing composition.

For Vitamins PLUS

PEAS, BEANS, CORN and TOMATOES are excellent sources of Vitamins A, B_1, and C —all vitally necessary to good health. Well balanced diets should contain an abundance of these vegetables, and when canned at home in KERR MASON JARS they are inexpensive, and oh, so good!



CORN

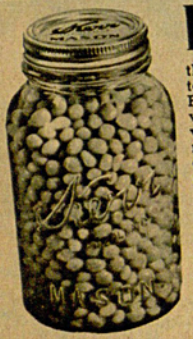
Use only absolutely fresh corn that is tender and juicy. Husk, cut from cob, place in pan with just enough boiling water to cover. Precook 3 to 5 minutes. Pack loosely to within 1 inch of top into clean KERR Jars and fill with water in which vegetable was precooked or boiling water to within ½ inch of top. Add 1 teaspoon of salt and sugar mixture if desired to each pint jar. Put on cap screwing band firmly tight. Process according to time table, page 3. Corn may be canned on the cob by following this recipe. The flavor of the corn on the cob will be improved if no liquid is added to the jar. Jars without liquid must be processed in the pressure cooker.

BEANS

(String) Wash, string and cut in convenient lengths or leave whole. Proceed the same as for lima beans except to pack to within ½ inch of top of jar. Process according to time table, page 3.

★

BEANS (Lima) Wash, shell and place in a pan with just enough boiling water to cover. Precook for 3 minutes. Pack to within 1 inch of top into clean KERR Jars. Add ½ teaspoon salt to each pint jar if desired, fill to within ½ inch of top with water in which vegetable was precooked or boiling water and put on cap, screwing band firmly tight. Process according to time table, page 3.



PEAS

Use only young tender, freshly gathered peas. Shell, wash and sort according to size. Precook 3 to 7 minutes, depending on the age and size of the peas. Pack loosely to within 1 inch of top into clean KERR Jars. Fill to within ½ inch of top with water in which vegetable was precooked or boiling water. Add 1 teaspoon of salt and sugar mixture to each pint jar if desired. Put on cap, screwing band firmly tight. Process according to time table, page 3.

★

PEA SOUP—Precook the peas until soft in water to cover. Remove from fire and press through sieve. Pour into clean KERR Jars and add 1 teaspoon salt to each quart if desired. Put on cap, screwing band firmly tight. Process according to time table, page 22.

TOMATOES

Scald tomatoes in boiling water 1 minute. Soak in cold water 1 minute —peel, core, quarter and pack into clean KERR Jars. Add no water. Add teaspoon salt to each quart jar if desired. Put on cap, screwing band firmly tight. Process according to time table, page 2.

★

TOMATOES (For Salad) No. 1—Scald tomatoes in boiling water 1 minute. Soak in cold water one minute—peel, core and pack into clean KERR Jars. Fill jars to within ½ inch of top with tomato juice or water, put on cap, screwing band firmly tight. Process according to time table, page 2.

"I saved 1c to 7c per jar on all my home canning"

"Saved enough on my canning to buy a beautiful new coat—besides my fruit and vegetables tasted so much better. I followed the KERR methods and recipes and found it much Easier and Quicker."

"I take no chances"

"Baby gets only our own home canned vegetables,—especially strained. For I know what's in them and besides it saves a lot of money. Cooking and canning were the best things I got in school."

"I confess that"

"...I never knew canning could be so easy, until I used KERR Jars & Caps... followed Kerr time-tables & modern methods...and splendid tested recipes"

"Girls write to me"

"asking which is the best way to can. In all my experience I've never found better or clearer instructions than in the Kerr Home Canning Book ...I highly recommend it."

Lesson 8—What Causes Food to Spoil?

54. *Name the different kinds of organisms which cause the spoilage of food.*
55. *State under what conditions mold thrives.*
56. *Are yeast plants difficult to control?*
57. *What are bacteria?*
58. *In canning fruits and tomatoes what aids in killing the bacterial cells?*
59. *What is "flat sour?"*
60. *Why is it more difficult to sterilize or process all vegetables (except tomatoes) so that they will keep indefinitely?*
61. *Should preserving "powders" ever be used in canning? Why not? What will accomplish the same results without powders?*
62. *What are harmless preservatives? Why are jellies, preserves, pickles kept more readily?*

THERE are three kinds of organisms, each of them different, which are responsible for food spoilage, namely, molds, yeasts, and bacteria. Mold requires oxygen (air), considerable moisture and heat for its growth. It uses sugars, starches and proteins to feed on. When canned fruit molds, the jars are not sealed, as mold can only form in the presence of air.

The second cause of spoilage—YEASTS, are not difficult to control in canning. They are the natural agents which produce alcoholic fermentation. Yeast grows when given food in the form of sugar, warmth, moisture and air, breaking up the sugar and producing a gas called carbon dioxide and alcohol. Bubbles of this gas may be seen when a jar of fruit ferments. Yeasts are easily killed by moist heat at a temperature of 160 to 190 degrees for varying periods of time.

Bacteria are the most serious foes to combat in canning. They are minute microorganisms which reproduce themselves under suitable conditions with great rapidity. Bacteria in the actively growing state can be killed by subjecting them to moist heat at boiling temperature for variable lengths of time, but some bacteria go through a spore (dormant) form and in that stage are very resistant to heat. In canning fruits and tomatoes, the acid in these products aids the heat in killing bacterial cells.

Flat sour is a type of spoilage that may develop in canned vegetables. Corn, peas, beans and asparagus are the vegetables most likely to develop flat sour. A jar of these products may show no sign of spoilage yet have a sour taste and disagreeable odor when opened. This is termed "flat sour" and can be avoided by using fresh products, carrying the canning procedure through without delay, and properly processing, cooling, storing.

With the exception of tomatoes, practically all vegetables are non-acid foods. This is one reason why vegetables are more difficult than fruit and tomatoes to sterilize successfully or to process so that they will keep indefinitely in good condition.

Preserving powders or chemicals added to foods for their preservation are considered detrimental to health. "It is entirely practicable to put up both fruits and vegetables in such a manner that they will keep indefinitely by sterilizing the products by means of heat, and there is no excuse for running any risk by using preserving powders," says the United States Department of Agriculture.

There are harmless preservatives such as salt, sugar and vinegar which are absolutely safe to use. These are often combined with a mixture of certain spices. In the presence of excessive or unfavorable amounts of sugar, salt or vinegar, bacteria and yeast cannot grow successfully. Products such as jellies, preserves and pickles are more easily kept because of the presence in quantity of one or more of these preservatives. Jelly, preserves and marmalades can be protected from mold by pouring over them a thin layer of melted paraffin. Paraffin helps to prevent mold mainly because it prevents air (carrying mold spores) from coming in contact with the surface of the preserved product.

Questions on Lesson 9

63. *Why do fruit juices form an important part in the daily diet?*
64. *When making fruit juices should one use ripe, green, or over-ripe fruits? What two methods of extracting juice are commonly used? Describe each.*
65. *Will fruit juices keep without heat?*
66. *Should fruit juices be allowed to boil?*
67. *If fruit juices are preferred sweet, how much sugar or honey should be added?*
68. *When fruit juice is to be used for jelly making, is it best to use the hot or cold process? Why?*
69. *If fruit juices are to be used for jelly making later, should sugar be added?*
70. *How can tartaric acid crystals in grape jelly be avoided?*

Lesson 9—
Refreshing Fruit Juices

Fruit juices form an important part of the diet as they are a rich source for mineral substances needed in the body. The body loses daily almost an ounce of mineral salts, which must be supplied by fruits and vegetables. Fruits assist in keeping the blood and other fluids of the body alkaline and neutralize the harmful acids produced by the tissues in the daily upkeep of the body. Meats, fish, breads, pastries, sugar and candy have an acid effect in the body.

Select only ripe fruit for the making of fruit juices. Green fruit gives too much acidity to the finished product, while overripe or spoiled fruit imparts a disagreeable taste.

Fruit should be washed carefully to free it from adhering dust and dirt, which are always found in greater or smaller amounts on freshly picked fruits, especially on low-growing berries like strawberries and dewberries. This is best accomplished by placing fruit in a wire basket or colander and allowing a spray of water to run over the fruit.

There are two ways of extracting juices. One is called the *"cold process,"* the other the *"hot process."*

For the **Cold Process** an ordinary cider mill may be used for handling the fruit in quantities, but if only a small quantity is to be taken care of, the fruit may be crushed with a potato masher, food chopper, or fruit juice press. After crushing the fruit, juice is pressed through a cloth by twisting the two ends in opposite directions until the greater part of the juice is extracted.

The hot process, consisting of heating before pressing, increases the yield of juice, intensifies the color, and develops a more distinctive flavor than can be obtained by simply cold pressing. Juices flow more readily from fruit when heated than when cold. When the fruit juice is to be used for jelly making, the hot pressing is necessary because heat is essential to extract the pectin which is the jelly making substance found in fruit juices.

If berries or small fruits are to be heated before pressing, about one-half the quantity should be crushed before heating, with a wooden potato masher in the vessel in which they are to be cooked. Place the utensil containing the fruit over a second vessel containing hot water, so that the fruit may be steamed instead of stewed until tender. A better color and flavor will be retained if the fruit is not allowed to come in contact with the fire. The temperature should not go above 200°F. *Less juicy fruits require addition of water and a longer heating to extract the juice.*

Fruit juices should not be allowed to boil, for not only does the amount of heat spoil the color and flavor but the boiled fruits and juices are considered acid-forming, especially if they are much cooked with a quantity of sugar. If you do not have a thermometer to regulate temperature, heat juice in a double boiler and allow it to steam or simmer for five minutes.

Fruit Juices

The juices of such fruits as currants, blackberries, raspberries, elderberries and cherries may be canned. The flavor of these juices is better if the fruits are cooked and the juice pressed out. Select sound, ripe fruit. Crush and heat slowly to simmering point. Strain through a double thickness of cheesecloth. The addition of sugar will give a better flavor. If desired, add 1 cup of sugar to one gallon of juice. Bring juice to simmering point and pour into clean KERR Jars, to within ½ inch of top. Put on cap screwing band firmly tight. Process according to time table, page 2.

When the juice is extracted it may be filtered by allowing it to drop through a flannel or felt cloth. Carefully strain before pouring into hot sterilized jars or bottles, allowing about one inch at top for expansion. Juices will not keep unless heated to a temperature of 170° to 190° Fahrenheit. *(Processing filled jars for 30 minutes in the Hot Water Bath at 180° (simmering) is an excellent way to insure their keeping.)*

If juices are bottled for beverages a small amount of sugar, honey or cane syrup will produce a flavor preferred by many to that of unsweetened bottled juices. Proportions vary but a fair allowance is one cupful of sugar or one and one-half cupfuls of honey to one gallon of juice. If juice is to be used for jelly making later, add no sugar. If grape juice is allowed to stand, the tartaric acid will crystalize and settle to the bottom. The juice should be poured off carefully so as not to disturb the sediment which contains these crystals. *This method of allowing bottled juice to stand undisturbed insures in grape jelly the absence of tartaric acid crystals which are so objectionable.*

●

Strawberry Rhubarb Juice

Grind six (6) pounds of strawberry rhubarb through a food-chopper, then strain juice through jelly bag. Allow juice to stand 2 or 3 hours. Then carefully drain juice from sediment in bottom of kettle. Pour juice into clean KERR Jars, adding 4 tablespoons sugar to each pint. Put on cap, screwing band firmly tight. Process in water bath 30 minutes at simmering temperature (180°F.).

Fruit Juices (Left from Canning)

All kinds of fruit juices may be preserved by pouring the boiling hot surplus juice left over from your regular canning into clean KERR Jars. Put on cap, screwing band firmly tight. Process in water bath 30 minutes at simmering temperature (180°F.). (These juices form excellent beverages combined with lemon or orange juice.)

Apple Cider

Use fresh cider that is made from sound sweet apples. Pour the cider into a kettle and heat steaming hot (do not boil), skim. Pour into sterilized KERR Jars. Seal.

Blackberry Cordial

Select large ripe blackberries. Mash and strain through coarse cheesecloth without heating them. To every quart of juice add 2 cups of sugar. Tie in thick muslin bag ½ ounce of grated nutmeg, ¼ ounce whole cinnamon, ¼ ounce whole cloves and 1 small piece of mace. Boil juice and spices 25 minutes, removing scum as it rises. Remove spice bag and stir in 4 tablespoons vanilla extract. Pour into sterilized KERR Jars and seal.

Peach Nectar

Select sound, ripe fruit. Peel and crush. Combine 4 cups of fruit with 3 cups of water and heat slowly to simmering. Press through colander, then through fine sieve. To each pound of the fruit pulp and juice, add ¾ pound of sugar. Bring to simmering temperature. Stir until sugar is well dissolved. Pour into clean KERR Jars. Put on cap, screwing band firmly tight. Process 30 minutes in water bath at simmering temperature (180°F.).

WIN A MODERN HOMEMAKER Diploma

• No Cost to You

EACH STUDENT who studies these lessons in home canning and who passes the examination, will get a handsome diploma! Study these lessons thoroughly. Have your teacher or group leader give you the examination questions. There are 107 questions plus the review ones on page 31, making a total of 150.

If your score is between 151 and 161 your diploma will be "Magna Cum Laude."

If your score is between 110 and 150, you win the "Cum Laude" diploma.

Should your score be 85 to 109, you will get the Standard diploma.

It will be nice to frame for your room or put in your scrap book. *Absolutely free.*

Not in a long time has home canning been so important as today . . . Our National defense calls for the greatest conservation of foods possible. Not only do you learn valuable information but learn a Useful Skill. So, start in and be one of the first to get the coveted Modern Homemaker Diploma.

All that is necessary is a signed statement from your teacher or leader, telling us your score, in her own handwriting. Print clearly your name (as you want it on the diploma) and address on a stamped envelope. It is not necessary to mail your examination papers to us.

Remember . . . THREE types of diplomas. You'll be proud to show it to your friends, as we are proud to award it.

Edward van Rondys, *Editor*
MODERN HOMEMAKER
Box 710, Pasadena, Calif.

HEALTHFUL VEGETABLES

End of the Garden Pickles

1 cup each sliced cucumbers, chopped sweet peppers, chopped cabbage, sliced onions, chopped green tomatoes, chopped carrots, green string beans cut in inch pieces, chopped celery
1 tablespoon celery seed
2 tablespoons mustard seed
2 cups vinegar
2 cups sugar
2 tablespoons turmeric

Soak cucumbers, peppers, cabbage, onions and tomatoes in salt water over night (½ cup salt to 2 quarts water). Drain. Cook the carrots and string beans in boiling water until tender; drain well. Mix soaked and cooked vegetables with remaining ingredients and boil 10 min. Place into sterilized KERR Jars; seal at once.

SOUPS (Continued from page 3)

Asparagus—Use tough part, boil. Press thru sieve, pour in jars, season.	180	40	10
Clam Chowder—Precook ten minutes. Pack in jars.	240	90	15
Fish Chowder—Use fish scraps. Cover with water and thoroughly cook. Add other ingredients. Pack in Jars.	240	90	15
Pea Soup—Precook peas until soft, press thru sieve. Pour in jars. Season.	180	60	10
Soup Stock—Use scraps of meat, cover with water, season, simmer until cooked. Pour in jars.	180	45	15
Vegetable Soup Mixtures—Use any vegetable combinations, blanch or precook. Pack in jars. Season, process time necessary for vegetable requiring longest processing.	.....	....	....

ASPARAGUS SOUP

The tough part of asparagus may be used. Cook in enough water to cover. When soft remove from fire, press through sieve. Pack into clean KERR Jars, add 1 teaspoon of salt to each quart jar if desired. Put on cap, screwing band firmly tight. Process according to time table above.

SOUP STOCK

Cover bones and trimmings of meat with water. Season and cook about two hours. Remove meat and bones. The stock may or may not be strained. Pour into clean KERR Jars. Put on cap, screwing band firmly tight. Process according to time table, above.

TOMATO PUREE

1 onion
3 stalks celery
3 sweet peppers
½ peck (6¼ lbs.) tomatoes

Simmer all ingredients until soft. Press through sieve, season with salt and pepper. Pour into clean KERR Jars. Put on cap, screwing band firmly tight. Process according to time table Page 2.

VEGETABLE SOUP MIXTURES

1 large onion (cut fine)
1 qt. tomatoes (cut fine)
2 cups okra (cut fine)
2 cups corn (cut fine)

Cut the onion fine, and cook this mixture together for 10 to 15 minutes, stirring frequently to prevent scorching. Pack loosely into clean KERR Jars to within ½ inch of top. Add 2 teaspoons salt and sugar mixture to each quart jar. Put on cap, screwing band firmly tight. Process in pressure cooker 40 minutes at 10 pounds or 3 hours in water bath.

Any mixture or combination of vegetables such as onions, peas, carrots, etc., may be used. Precook each vegetable required length of time. Pack into clean KERR Jars. Process mixture length of time necessary for vegetable needing longest processing.

"And We Made Money"

$33.25

I am enclosing a picture of myself with the jars of my canned goods that brought me $33.25, at the State Farm Show held at Harrisburg. I won 6 first prizes, 3 second prizes and 1 fourth prize. I'm sure now I have found the secret of success in Kerr's special square jars They made it so easy to pack the fruit and vegetables attractively.

Florabelle Duvall

I sell almost anything I can. Pickles and jelly sell especially well but I find that ordinary caps neither keep well nor look well on pickles so I welcomed my find when I discovered Kerr caps. I am especially interested just now in canning meats and fruit juices and was overjoyed to find that I could get wide mouth Kerr jars with such convenient lids. I believe I clear more money now than when I taught school and there's worlds more pleasure in it. I now have six days at home where I had only two before. No more school teaching for me.

Mrs. J. S. Kincaid

4-H CLUB WINNERS

● The nation's five 4-H canning project champions for 1940 are agreed that it is a mighty pretty jar of pears that Ruth Childress of Baton Rouge, La., is holding. The others from left are: Mildred Maassen, Portland, Ore.; Marie Fletcher, Quincy, Fla.; Virginia Pollard, Nehawka, Neb.; and Dorothea Nixon, Westford, Mass. All received their trips to the National Club Congress through the Kerr Glass Manufacturing Corp., Sand Springs, Oklahoma, and $200 scholarships each as National blue award winners.

Lesson 10—
Jelly Making

A GOOD glass of jelly is clear, sparkling, transparent and of a beautiful color. When slipped out of the glass it holds its form and will quiver. It can be cut with a clean, distinct cleavage, retaining the clear surface and angles made by the knife. Tenderness and firmness are unmistakable qualities. **There are two types of jelly:**

(a) The fruit jelly made from natural fruit juices which contain sufficient pectin for making good jelly.

(b) The pectin-base jelly which is usually artificially colored and has the addition of some flavoring.

PECTIN is the jelly making substance found in fruit juices, which causes the juice to jell. Some fruits contain much more pectin than others. It is more abundant in slightly under-ripe fruit than in fruits which are fully ripe. The best fruits for jelly making are those which contain both pectin and acid. These fruits are: sour apples (including crab apples), cranberries, red currants, gooseberries, grapes, sour guavas, grapefruit (bitter if used alone —should be mixed with other fruits), lemons, loganberries, sour blackberries, sour oranges, plums (most varieties). Some fruits are rich in pectin but deficient in acid. Some varieties of quinces, sweet apples and guavas come under this category. Then again we find fruits which are rich in acid but deficient in pectin such as pomegranates, ripe apricots, cherries, pineapples, strawberries. Finally, we have one more class of fruits which are lacking both in acid and pectin, such as elderberries, peaches, some varieties of raspberries and overripe fruits.

Where fruits are lacking in either pectin or acid they can sometimes be combined with other fruits having the lacking ingredient and these combinations make delicious jell. A chart showing what fruits may be used alone or successfully combined for jelly making, is given herewith:

Apple
Apple and Mint
Apple and Strawberry
Apricot
Apricot and Pineapple
Apricot and Plum
Apricot and Strawberry
Blackberry
Crab Apple
Crab Apple and Cherry
Crab Apple and Raspberry
Currant, Black
Currant, Red
Currant, White
Currant and Apple
Currant and Apricot
Currant and Pear
Currant, Peach and Pineapple
Loganberry
Fig; Fig and Lemon
Grape
Grape, Muscadine
Grape and Apple
Grape and Apricot
Grape and Orange
Grapefruit
Grapefruit and Cherry
Grapefruit and Roselle
Lemon
Lemon and Cherry
Plum and Raspberry
Lemon and Raspberry
Loganberry and Pineapple
Orange
Orange and Pineapple
Orange and Apple
Orange and Plum
Peach and Lemon
Peach and Apple
Peach and Quince
Pear and Lemon
Pear and Apricot
Pineapple and Quince
Plum
Quince
Quince and Apple
Quince and Apricot
Raspberry
Raspberry and Currant
Roselle
Tomato and Peach

71. *What is Pectin?*

72. *Which type of fruit is best for jelly making? Fruits rich in acid and pectin, fruits rich in pectin but lacking in acid, fruits rich in acid but lacking in pectin, or, fruits lacking both pectin and acid?*

73. *What three ingredients combined in proper proportions will make jelly?*

74. *Can pectin be made at home? If so, what is it made from?*

75. *To make jelly how does one best obtain the fruit juices—by crushing cold fruit which has been washed or by applying heat to fruit which has been washed?*

76. *Give two reasons why it is necessary to heat fruit before extracting juice for jelly.*

77. *Name two kinds of tests whereby fruit juice may be tested for pectin.*

78. *Should large batches of jelly be made at one time?*

79. *Should jelly be cooked slowly, simmered or boiled rapidly? Should juice be boiling or cool when sugar is added?*

80. *(a) What causes soft or syrupy jelly?*
(b) Tough jelly?
(c) crystallized jelly?
(d) Cloudy jelly?
(e) Weepy jelly?

Pectin can be made at home from the white part of orange peel, or from apples, and then added to the juices. **Orange pectin** is made by combining 1 cup white part of orange peel, 2 cups water and juice of 1 lemon. Let stand overnight, boil five minutes, strain through cheesecloth, put in jars, cap and process 30 minutes at simmering temperature (180° F.). 1 tablespoon of this pectin added to each pint of fruit juice will cause it to jell.

Apple pectin is made from 2 pounds of apple pulp (or skins and cores) 4 cups of water, juice of 1 lemon. Boil for 40 minutes, press juice through a cloth bag, then strain this juice through a flannel bag without pressure. Boil juice rapidly 15 minutes. Seal in sterilized jars until ready for use. Use 1 cup apple pectin for each cup of other fruit juice used.

Juice must first be extracted from fruit by applying heat. Fruit juice flows more rapidly when fruit is heated than when it is simply crushed. Heating is also necessary to extract the pectin in fruit. Satisfactory tests for pectin cannot be made with uncooked fruit juices. It is necessary to test the juice for pectin to determine whether it contains sufficient pectin which will indicate the amount of sugar to be used. The following tests may be made:

1. To one teaspoonful of cooked juice, add one teaspoonful of grain alcohol and stir slowly. Wood or denatured alcohol may be used but DO NOT TASTE as the latter two are POISON.
   (a) Juice rich in pectin will form a large amount of bulky gelatinous material.
   (b) Juice moderately rich in pectin will form a few pieces of gelatinous material.
   (c) Juice poor in pectin will form small flaky pieces of sediment.
2. Or mix two teaspoons of sugar, one tablespoon Epsom Salts, two tablespoons cooked fruit juice. Stir well and let stand for 20 minutes. If mixture forms into a semi-solid mass, the juice contains sufficient pectin.

No simple household method can be used to test fruit juice for acid, except tasting the juice for tartness. Lemon juice may be added if necessary to give acid content. The amount of sugar to be added will be determined by the pectin and acid content of the juice. The less pectin, the less sugar used. For juices rich in pectin, use ¾ to 1 cup of sugar to 1 cup of juice; for juices poor in pectin, add only ½ cup of sugar to 1 cup of juice.

When proper amount of sugar has been determined, allow the juice to boil before adding it. Clarify the juice by skimming it before the sugar is added. Add the sugar gradually to the boiling juice, stirring until it is all dissolved. After the sugar has dissolved it is unnecessary to stir the jelly. Cook very rapidly to keep the jelly bright and clear. Slow boiling will also destroy the pectin in the fruit juice. Do not skim the juice after the sugar is added but leave the scum unbroken until the jelly is done, then remove all at one time before pouring the jelly into containers. Jellies usually need to boil ten to fifteen minutes after the sugar is added.

Jelly may be made with either cane or beet sugar as analyses show them to be chemically the same.

A thermometer will aid greatly in jelly making. The temperature of the boiling juice at jellying point will be from 220° to 222° F. at sea level, however, this will vary one to five degrees according to the kind of juice and the amount of sugar used. At higher altitudes the temperature will be lower.

If a thermometer is not available, dip a spoon or wooden paddle in the boiling juice. As the juice nears the jellying point it will drop off from the sides of the spoon in two drops. When the drops run together and slide off in a flake or sheet from the side of the spoon, the jelly is finished and should be removed from the fire at once.

Jelly should be poured, while hot, into hot sterilized jars or glasses. As the glasses are subjected to a strain when the boiling jelly is poured into them, they should be kept in a pan of hot water. Glasses should not be filled too full. *Pour jelly only high enough to allow for a layer of paraffin and ⅛th inch of clean glass above the surface of the paraffin.* A teapot makes an excellent paraffin pot. If the paraffin seal is used, pour a thin layer of very hot paraffin on the top of the hot jelly, and then several hours later or the next morning after the jelly is cold, pour on another thin layer of very hot paraffin.

Jelly sometimes is syrupy because more sugar has been used than the fruit juice requires, or because boiling (after the addition of sugar) was not continued long enough.

Jelly is tough or stringy because too small an amount of sugar was used for the pectin present in juice, or because the jelly was boiled too long.

Crystals appear in jelly because too much sugar was used; or boiling too long before sugar was added to the juice, so that the two were not boiled together long enough; or in the boiling, the syrup spatters on the side of the pan, dries and in pouring the jelly these crystals are carried into the glass and the jelly becomes seeded with crystals. Crystals often appear in grape jelly because of tartaric acid in the grapes. This may be overcome by allowing the juice to stand, the tartaric acid will crystallize and settle to the bottom. The juice should be poured off carefully so as not to disturb the sediment.

Cloudy jelly may be due to having cooked the fruit too long before straining off the juice or to not having used sufficient care in straining the juice. Sometimes it is noticed in apple and crab apple jelly that, although it is clear when first made, the jelly becomes cloudy after a time. In these cases it is usually due to the use of partly green fruit, the starch in this fruit probably causing the cloudy appearance.

When liquid escapes from underneath the jelly glass cover and flows down the outside of the glass it is called **"weeping jelly."** To prevent this, do not fill glasses too full, or have the paraffin cap too thick. Do not handle a "tender" jelly after it has jelled, or allow it to stand for several months in a jar that is not sealed. Always store jellies in a cool, dark, dry place.

No difficulty should be found in handling six or eight glasses of jelly at one time if everything is conveniently arranged before cooking is begun. The capacity of the kettle should be four times as great as the quantity of juice cooked.

My Man..
IS PROUD OF M
"Jim is so proud of me he is about to "pop"--
He never dreamed I could cut our food costs so mu
---yet serve better and more nutritious foods.
"It's easy, enjoyable fun to
can at home with KERR Mason
Jars and Caps--the kind that
really keeps your foods."
Joan M.
MASON
MASON

Questions on Lesson 11

81. Describe separately Preserves, Conserves, Jams, Marmalades, Butters.
82. How should fruit be prepared for making jams? Should jams be cooked slowly or rapidly?
83. How should preserves be cooked? Why?
84. Should jams, preserves, marmalades be filled piping hot into jars as soon as cooking is finished?
85. Should these products be processed at all? If so, how long and at what temperature?

Lesson 11 — Preserves, Jams, Conserves

PRESERVES are much richer than fresh and plain canned fruits because they are cooked together with a large amount of sugar. For this reason their use in the daily menu should be limited.

Some fruits like strawberries, plums, sour cherries, quinces and melon rind are generally considered more palatable when preserved than when canned. Shakespeare may have thought of some of these delicious sweets when he said, *"I can teach sugar to slip down your throat in a million ways."*

A preserved fruit is one cooked in syrup until it is clear, tender and transparent. The special problem in preserving is to introduce the syrup gradually enough for syrups to permeate the fruit thoroughly without shrinking and toughening it. If fruit is dropped at once into thick hot syrup, the juice of the fruit will be drawn out so quickly by this heavy liquid that the syrup cannot enter the fruit rapidly enough to prevent it from shrinking and shriveling.

Preserves should be cooked over a very hot fire as rapidly as possible until the pieces are tender and clear. If slowly cooked the result will be a dull, dark, unattractive product. Long cooking injures color and flavor of fruits. If left covered in the vessel in which they were cooked, overnight, preserves will be more plump and improved in shape and flavor.

Marmalades, jams and conserves, when well made, always show a jelly-like appearance, thus denoting there must be some pectin present in the fruit that is used.

Fruit for making jams and conserves is better if both ripe and slightly under-ripe fruits are mixed about half and half. Where the fruits such as soft berries contain a large quantity of juice, it is best to simmer the fruit for a while to evaporate some of the water before sugar is added.

Marmalades, jams and conserves should be cooked very rapidly over a hot fire after the addition of sugar, in order to retain the best flavor and bright color.

Many different kinds of jams, marmalades and conserves are improved by allowing them to cool before pouring into jars. Stir jam or marmalade occasionally as it cools so the fruit or pieces of fruit may be evenly distributed.

Jams which contain 55% sugar to 45% fruit do not mould as easily as those in which the sugar content falls below this percentage.

Such fruits as raspberries, loganberries, strawberries, cherries, etc., require no water be added before cooking down, but with currants, gooseberries, blackberries and plums, water is added according to directions in individual recipes.

Cherries and strawberries require the addition of acid in the proportion of 1 lemon or two tablespoons of lemon juice to each pound of fruit. Acid will brighten the color, also improve consistency, color and flavor of fruit.

JAMS require less sugar than preserves. To save time and stirring, jams may be baked in the oven. First cook jam in an open vessel until it comes to a boil, and all ingredients are thoroughly mixed, then put in the oven and bake.

FRUIT BUTTERS are fruit pulps, usually cooked with half as much sugar as pulp, with or without addition of spices, until a consistency of paste is reached. Butters use less sugar than marmalades and jams.

CONSERVES consist of either large or small fruits, or both combined, to which nuts and raisins are sometimes added. Nuts should be added five minutes before removing from the fire as long cooking destroys color and flavor.

MARMALADES are made from fruits or combination of fruits often including citrus varieties. The fruit appears in small particles or pieces throughout the clear, transparent jelly-like product. If boiled more than 40 minutes the color becomes dark and fruit flavor is destroyed.

Cooking in small quantities helps retain color and flavor. Jams, etc., should be cooked until a small quantity flakes off the side of the spoon, then remove from the fire immediately.

By processing jams (after being filled in jars) in hot water bath for 20 to 30 minutes at 180° Fahrenheit, perfect seal may be obtained.

Bang-Up Jam Recipes

Apricot-Raspberry Jam

2 pounds apricots
¼ cup water
4½ cups sugar
1½ cups raspberries

Add water to apricots which have been pared and pitted. Add sugar and raspberries and cook until jam is of desired consistency. Pour into sterilized KERR Jars and seal.

Blackberry and Apricot Jam

1 cup apricots
⅓ cup blackberry juice
1 cup blackberries
1½ cups sugar

Slice ripe apricots. Add blackberries, juice and sugar and cook to the desired consistency. Pour into sterilized KERR Jars and seal.

Carrot Jam

5 pounds carrots
Juice 6 lemons
6 cups sugar

Wash, pare and grate carrots. Add lemon juice and sugar, cook slowly until thick. Pour into sterilized KERR Jars and seal.

Damson Plum Jam

4 qts. damson plums
1 qt. cold water
Sugar

Wash plums, add the water and cook the fruit until the skins are soft. Cool and remove the seeds. Measure and add two-thirds as much sugar as fruit. Stir mixture over low flame until sugar is dissolved. Boil rapidly until mixture is thick and clear. The flavor of the plums should be practically unchanged and the color rich sparkling red. Pour into sterilized KERR Jars and seal.

Grape Jam

3 pounds grapes
2 oranges
1 cup chopped raisins
2 cups sugar

Wash grapes and remove stems. Add 1 cup water and cook until seeds and skin separate. Rub through coarse strainer and add juice and grated rind of orange, raisins and sugar. Cook until thick, then pour into sterilized KERR Jars and seal.

Pear Honey

3 pounds ripe pears
1 cup diced pineapple
Grated rind and juice 1 fresh lime
5 cups sugar

Wash, pare and core the pears; run through a food chopper using the fine blade. Dice the pineapple fine and combine with the pears. Add the lime rind and juice. Add sugar and cook over slow heat stirring frequently. Cook for 20 minutes. Pack into sterilized KERR Jars and seal.

Raspberry and Cherry Jam

1 cup pitted cherries
1 cup crushed raspberries
2 cups sugar

Cook the cherries in a very small amount of water until the skins are tender. Add the raspberries and the sugar and boil the mixture until thick. Pour into sterilized KERR Jars and seal.

KEEP THAT . . . GARDEN Fresh GOODNESS
STOP CANNING WASTE USE Kerr MASON CAPS!
Kerr
"SELF SEALING"
MASON
FOR ALL METHODS OF CANNING
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A well-balanced diet containing the necessary fruits and vegetables is just as easy in winter as in summer when you learn to can in KERR MASON JARS.
"Hungry tomorrows" are a thing of the past for the thrifty, modern homemaker who serves her vitamins from KERR JARS—the fruit jar that keeps the "garden fresh goodness."

Questions on Lesson 12

86. What is the proportion of sugar and salt used in the sugar-and-salt mixture? In what vegetables is it used? What may be substituted for white sugar in such a mixture?
87. What is meant by pickling? Name 10 different forms of pickles.
88. What occasionally causes pickles to turn black?
89. What causes hollow pickles? Soft pickles? Shriveled pickles?
90. What vinegar is best to use in brining or pickling?
91. Why does scum form on pickled foods?
92. How can one be assured of having crisp pickles?

Lesson 12—
Vegetables and Pickles

WHEN CANNING certain vegetables, one is sometimes admonished to add sugar-and-salt mixture to tomatoes, peas, beans, lima beans and corn. The proportion of sugar and salt used in this mixture is one part salt to two parts sugar. Brown sugar or honey may be substituted for white sugar in such a mixture.

The aroma and flavor of pickles and relishes stimulate the appetite, but if used excessively they tend to disturb digestion. The preservation of food with salt or vinegar, either with or without the addition of spices or sugar, is commonly known as "pickling." The pickling of vegetables has been practiced since primitive times. Our ancestors saved much of their surplus crop by storing it away in brine.

There are many variations in kinds and flavors of pickles. **The predominating flavor usually determines the kind of pickle.** In "sour pickles" the flavor of vinegar predominates, while in "sweet pickles" the sweetness is more prominent. In "mustard pickles" sufficient mustard has been added to give a desired mustard flavor, and in "dill pickles" the dill flavor predominates. Peaches, pears, cherries, plums, watermelon rind, and apples are used for "spiced pickles." "Ketchup," "Chili Sauce," "Chutney," "Relish" and "Chow Chow" are different forms of pickles.

If iron is present in any appreciable amount in the water used in pickling, it may cause a blackening of the pickle. **Hard water** (containing lime) may prevent proper curing. The addition of a small amount of vinegar to hard water will overcome this.

HOLLOW PICKLES are due to faulty development of the cucumber, or may be caused by allowing too long a time to elapse between gathering and pickling.

Pickles sometimes become SOFT if too weak a brine or inferior grades of vinegar are used, or by diluting vinegar too much. Boiling pickles too long when using recipes which call for cooking is another cause.

If pickles are placed at once into a heavy syrup, too strong brine or too strong vinegar solution, or if too much time is allowed to elapse between gathering and pickling, SHRIVELING will result.

Pure apple cider vinegar is best to use for all pickling and brining except for white onions or cauliflower. *Cider vinegar causes onions and cauliflower to darken.*

SCUM forms on pickles if they are stored in open containers when liquid comes in contact with bacteria which are found in the air. Scum will not form on pickles if they are perfectly sealed.

If cold foods such as pickles made over recipes requiring no heating or processing are packed in jars, screw caps down tight, and if using the "Self-sealing" type of cap *do not remove screw band as cap has not formed a vacuum seal and the screw-band is necessary to hold the lid in place.*

CRISPNESS of pickles can be assured by using cider vinegar (except where white onions and cauliflowers are pickled) and using water as free from minerals as possible. Proper brining also assures pickles being crisp.

Facts About Exhibit Canning

Questions

93. *What is the first point considered in exhibit canning?*
94. *What kind of raw products should be selected for exhibit canning?*
95. *If such foods as tomatoes or beets are canned whole, what rule must be observed in preparing them?*
96. *Can the judge tell by appearance of the product whether or not it has received enough cooking?*
97. *How much liquid should the jar contain?*
98. *How may the liquid be kept free from sediment?*
99. *How is fruit packed into the jar?*
100. *Is a syrup used on fruits that are canned for exhibit?*
101. *Is it all right to add artificial coloring to fruit or vegetables to make them appear brighter? Why?*
102. *Would a jar that contained an elaborate or a fancy pack be placed among the winners?*
103. *Should a jar of meat show a solid coating of fat at the top of the liquid?*
104. *Can blood sediment in the bottom of a jar of meat be prevented? How?*
105. *How much liquid should be added to jars of pre-cooked meat?*
106. *Must the liquid over canned meats be congealed?*
107. *When a canned exhibit is to be entered in a certain contest or at a certain fair, what should first be done to avoid any misunderstanding?*

THERE are a number of opportunities for the careful home canner to earn various awards in merchandise or money by exhibiting home canned fruit and vegetables.

It would be impossible to give a definite set of standards by which the judging will be done. The standard requirements are so many and varied that it is unwise to attempt to adhere to any one score card, since each judge may use her own ideals as a standard. *However, there are a number of points which will always be observed by the judge, and it is well to keep these in mind when preparing jars for exhibit purposes.*

THE FIRST POINT TO CONSIDER IS APPEARANCE. From the general appearance of the canned product the experienced judge will be able to form some very definite ideas regarding the condition of the raw products used, the manner in which the food has been prepared for canning and whether or not the processing has been sufficiently long to insure keeping quality. It is therefore necessary to select fruits and vegetables of good quality, carefully cleaning and grading them according to size. The grading according to size is especially important in canning such foods as whole tomatoes, carrots or beets. *These products must be uniform in size and color if the finished jar is to be one which the judge will consider worthy of a high placing.*

CONDITION OF THE PRODUCT will be carefully considered by the judge. Foods canned whole or in pieces should retain their shape. The food should be at the proper stage of maturity. This is especially important in vegetables. If too old the vegetables will be tough and woody. If too young, they are undersized, watery and may be pulpy looking when processed. If the food has been overprocessed it will show injury to color and usually an undue softening or breaking up of the product. If the food is not processed long enough, this shows up in the firm hard-like appearance of the product and fruits will often show a definite heat penetration line.

IN JUDGING the pack, she will look for a uniformity of size and color of the food. A good proportion of liquid to solid material. The liquid in the jar must be free from sediment. The liquid going into the jar may be strained to avoid sediment in both fruits and vegetables. The food in the jar should fill it at least to the neck and should not float from the bottom of jars. The liquid should practically cover the food (except in canned meats or dry packed foods such as sweet potatoes).

The container will be judged as a part of the exhibit. The jar should be of clear, crystal glass so the true color of the fruit or vegetable will show to good advantage. The jar must be sealed air-tight (except pickles) and the cap used must be clean and attractive, giving the appearance of a well finished, complete and attractive container. The jar must be clean and well polished.

IN PREPARING FOR EXHIBIT CANNING it is well to consider a few points that will help us to turn out a quality product and let us consider fruits first. They are very high in juices and should be packed quite solidly. Such fruits as peaches may be cut into halves and packed in overlapping layers (called an economy pack) placing the pit-side down against the bottom of the jar. *The peaches should be ripe but firm in texture, smoothly peeled, with no ragged edges. For such soft fruits as berries, these should be fairly uniform in size and color, discarding the small, dry and ill-shaped ones.*

WASH BERRIES WELL AND INSPECT FOR INSECTS. The jar will not be judged if it contains stems, leaves or insects. After selecting and thoroughly cleaning the berries, they may be packed solidly by shaking the jar after each addition of a small amount of the berries in the jar. This will make the berries fit themselves into the jars without loss of jar space. A medium or light syrup should be used to fill the jar to within 1-½ inches of the top. If the jar is filled full of a heavy syrup, this will bring about additional shrinkage and the fruit will float. Best results in both color and general appearance is obtained when fruits are processed in the hot water bath.

SELECT FRESH, YOUNG AND TENDER VEGETABLES for canning. Observe the rule of grading for size and maturity. Be sure to clean the vegetable thoroughly. In preparing the vegetable, it should be cut or broken into sizes that are nice for serving. *Follow correct canning procedure in precooking the vegetable and contrary to the instructions for packing fruit, the vegetable pack should not be a tight one.* Be sure to pack the vegetables into the jar so there is no wasted jar space, but do not pack down solidly. If this is done the jar will lose some liquid during processing.

For example, green beans that are broken into 1-inch lengths may be packed in the same manner described for berries, but such vegetables as peas, lima beans and corn should be packed loosely and the jar filled only to within one inch of the top with the vegetable. Fill all jars of vegetables to within one-half inch of the top with the water in which the vegetable was pre-cooked. This may be strained to avoid sediment.

DO NOT add artificial coloring to fruit or vegetables. This will change the natural color of them and can be readily detected by the judge.

Fancy packs are not encouraged and the fancy packed jar is usually not judged. It requires too much time and proper rules of canning cannot be carried out if fancy packing is done.

If MEATS are to be exhibited, see that the finished jar of meat looks firm, well cooked, not broken or overcrowded. Blood sediment in the bottom of the jar may be overcome by partially cooking the meat before it is packed for processing. It is well to have the meat in the jar show some markings of fat but if the meat is too fat, the grease will be extracted during processing and when the jar is cold, it will make a solid coating that is quite undesirable in exhibit packs. The jars of precooked meats should be only about $\frac{1}{3}$ full of liquid when the processing is complete. This is brought about by adding only 3 or 4 tablespoons of liquid to each quart jar packed. The liquid in the jar may or may not be congealed. This will depend entirely upon the amount of gelatinous material in the meat.

All exhibits should be *PROPERLY LABELED* so that the contents are readily discernible. Read the rules governing the exhibit carefully and adhere to them. *Sometimes jars of food are opened for tasting.* This will be stated in the rules governing the exhibit and if your jars are entered, it will of course be understood that they will be opened.

Review Quizzes

Instructions for MULTIPLE CHOICE Quiz

There are 20 questions which total 31 points, for questions *7, 13, 14, 15, 17 and 19 have two or more parts.*

On a ruled sheet, number 1 to 20. Then write the letter (or letters) which indicate your choice of the answers. A perfect score is 31.

MULTIPLE CHOICE QUIZ

1. "Cold Pack" is *(a) Method of processing (b) a Method of canning (c) an expression referring to the cooling of the jars.*

2. "Blanched" in canning means *(a) whitened (b) scalded (c) soaking over night.*

3. You associate with "Hot Pack" the terms *(a) pre-cooking (b) processing (c) blanching.*

4. Meats and vegetables are better canned by *(a) Cold Pack (b) Open Kettle (c) Hot Pack.*

5. Peas, Beans, Corn should be packed to *(a) 1" (b) ½" (c) very top,* of the jar.

6. When using "Self-sealing" caps (no rubbers) you *(a) should (b) should not,* turn the jars upside down to cool.

7. With zinc caps and rubbers when you Hot or Cold Pack, you screw cap tight and then *(a) leave it alone (b) turn back ¼"* before processing. With *"Self-Sealing"* caps, you *(c) tighten the screw band firmly before processing and leave it alone (d) re-tighten it after processing.*

8. All vegetables when processed expand *(a) the same (b) some more than others (c) not at all.*

9. Strange as it sounds, Peas, Beans and Corn are *(a) quite starchy (b) without starch at all (c) quite acid.*

10. Peas, Beans and Corn need *(a) less room (b) more room (c) no room,* to expand in comparison with other vegetables.

11. A very tightly packed jar *(a) prevents (b) helps (c) has no effect upon,* the proper penetration of heat to the center of the jar.

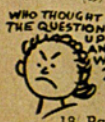
12. Pre-cooked (fried—roasted—boiled) meats can be packed to 1 " of the top and *(a) no juices added (b) 3 or 4 tablespoons of juice added.*

13. What 3 kinds of organisms cause spoilage? *(a) enzymes (b) molds (c) oxygen (d) yeasts (e) tree scale (f) bacteria.*

14. "Flat sour" *is (a) easily seen (b) has disagreeable* odor, and is found more often in *(c) meats (d) fruits (e) vegetables.*

15. Molds in canned foods thrive on *(a) sugar (b) vinegar (c) starches (d) proteins (e) air (f) warmth (g) cold.* (Select 5 factors.)

16. Tomatoes and fruits possess acids which *(a) help (b) do not help,* destroy bacteria cells.



17. The U. S. Dept. of Agriculture *(a) advocates (b) disapproves,* of the use of chemicals and powders for the preserving of foods. Sugar, salt, spices and vinegar *(c) are (d) are not,* considered "chemicals and powders" in this sense.

18. Paraffin's chief help in jelly making is *(a) its ability to kill germs (b) exclusion of air.*

19. To test fruit juices for pectin, it is best to use *(a) uncooked (b) cooked,* juices then add *(c) Lemon (d) Alcohol (e) Vinegar (f) Sugar and Epsom Salts—* and then observe for gelatinous material. (Select 3 choices.)

20. "Hard" water *(a) is helpful (b) may prevent (c) doesn't affect,* the proper curing of pickles.

See page 21 for your diploma

Instructions for TRUE-FALSE Quiz

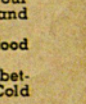
There are 23 questions. Number your ruled sheet from 1 to 23. Read the questions carefully and write "True" or "False," *do not omit any.* Check your paper for errors. Multiply total errors by 2 and subtract from 23. Example: Mary has three wrong, 3X2=6; 23—6=17. A perfect score is 23.

COMBINE the two scores by adding. A PERFECT score is 54.

(NOTE: When sending for your Diploma, you add ALL scores. A perfect GRAND score is 107+31+23=161.)

TRUE-FALSE QUIZ

True	False	
T	F	1. "Methods of Canning" is a preliminary step to actual processing.
T	F	2. In Open Kettle method, there is no need to sterilize the *"Self-Sealing"* cap.
T	F	3. In Open Kettle you must keep the food boiling all the time you are filling the jars.
T	F	4. "Hot Water Bath" and "Hot Pack" are one and the same thing.
T	F	5. "Pressure Cooker" is advocated by U.S. Government for the canning of vegetables and meats.
T	F	6. It is wrong to place jars in a Pressure Cooker on the bottom (without some type of rack) but such precaution is not necessary when using a Wash Boiler in Hot Water Bath.
T	F	7. Start counting processing time when the water is boiling in Hot Water Bath.
T	F	8. *"Self-sealing"* caps should be screwed down firmly tight before being processed by any of the four methods, and left absolutely alone when removed after processing has been completed.
T	F	9. Oven canning is done equally as well in wood or oil stoves as electric or gas stoves.
T	F	10. Fruits, tomatoes, may be processed by the oven method, but fish or beans should not.
T	F	11. There are no known bacteria that can live under 250° if the proper processing time is followed.
T	F	12. It is important to consider the altitude of your home, when canning with a pressure cooker, if you live above 2000 ft.
T	F	13. *"Self-sealing"* Kerr caps require no rubbers because the lids have a "flowed-in" vegetable composition, which makes a vacuum seal when the jars are cold.
T	F	14. Sugar and water (syrup) when processing does not expand any more than plain water.
T	F	15. "Heavy syrup" is made with equal parts by measure of sugar and water (or fruit juice).
T	F	16. Slightly salted water will help keep peaches, pears, apples, etc. from turning brown after peeling and before packing for processing.
T	F	17. Soft fruits such as sweet cherries, berries, etc. are best canned with heavy syrup.
T	F	18. Replacements of mineral salts in your body is best done by eating fruits and vegetables.
T	F	19. Never use a potato masher or food chopper for extracting the juices.
T	F	20. The "Hot Process" gets more juice, better flavored, better color than "Cold Process" for most fruits.
T	F	21. Best results for fruit juices which are canned to make jelly later, is to can them without sugar.
T	F	22. Hot Water Bath is considered by many as the most desirable method of processing fruit juices.
T	F	23. No matter how carefully you can your own fruit juices, they can never be as good as the "store brand."



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